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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/791,189

03/01/2004

Charles John Call

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12/02/2008

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EXAMINER

RAMILLANO, LORE JANET

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

12/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/791,189	Applicant(s) CALL ET AL.	
	Examiner LORE RAMILLANO	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/6/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,5,21,24,29-38 and 44-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4,5,21,24,29-32,34-38,46,47,49,50 and 53 is/are allowed.
- 6) ☒ Claim(s) 1,33,44, 45, 48, 51, and 52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/4/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Reopening of Prosecution After After-Final Amendment

1. In light of applicant's after-final amendment, prosecution is re-opened and new rejections follow.

Status of Claims

2. Claims 1, 4-5, 21, 24, 29-38, and 44-53 are pending and under examination.

Allowable Subject Matter

3. The indicated allowability of claims 44-45 are withdrawn in view of the reference to Call et al. (US Pub. No. 2002/0124664). Rejections based on this cited reference follow.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claims 1, 33, 45, 51, and 52** are rejected under 35 U.S.C. 103(a) as being unpatentable over Danylewych-May et al. ("Danylewych-May," US 5859375) in view of Call et al. ("Call," US Pub. No. 2002/0124664, previously cited).

As to claim 1, Danylewych-May discloses an air sensor device configured to collect airborne particles and to evaluate collected airborne particles in order to determine if the collected airborne particles indicate the presence of a biological threat, comprising:

a regenerable solid collection surface for supporting a spot of immobilized airborne particles, the regenerable solid collection surface being specifically configured to remove particles from an air stream by impaction of the air stream against the regenerable solid collection surface;

means for regenerating the regenerable solid collection surface by removing particles from the regenerable solid collection surface, such that once regenerated, the regenerable collection solid surface can collect additional particles from the air, such

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that particles collected before regenerating the regenerable solid collection surface are substantially no longer present to contaminate particles collected after regeneration;

means for analyzing (i.e. detects biological signature such as mass spectrum, col. 1, lines 6-12) the spot of immobilized airborne particles while the particles remain disposed on the regenerable solid collection surface to determine if the spot of immobilized airborne particles represents a biological threat. (i.e. col. 5, line 35 to col. 6, line 55); and

an excitation light source configured to emit excitatory radiation that is directed towards the particles collected upon the regenerable solid collection surface, the excitatory radiation having a wavelength that excites any biomolecules comprising the particles to produce a fluorescence radiation to which the fluorescence detector responds (i.e. col. 3, lines 47-51).

As to claim 1, Danylewych-May reads on the claim language recited after the terms, “configured to,” and “for” because they are intended use language. While features of an apparatus may be recited structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. Because Danylewych-May discloses structural features that are capable of performing the intended use language recited after these terms, Danylewych-May properly reads on the claim language.

As to claim 1, while Danylewych-May discloses utilizing other types of analyzers, such as chemiluminescent detectors in col. 9, lines 2-10, Danylewych-May does not specifically disclose utilizing a fluorescence detector.

In one preferred embodiment, Call discloses a sampling system for screening incoming mail to detect potential chemical and biological threats. The mail sampling embodiment includes means for accessing a portion of the air within a parcel, means for aerosolizing any particulates contained within the portion of air removed, a triggering sampler, and a detecting sampler (i.e. [0019]-[0020]). Call further discloses utilizing a particle counter that comprises a nano-ultraviolet diode (nano-UV) pumped solid state laser and a mini photomultiplier tube (PMT) optical detectors ("fluorescence detector") for collection of particle fluorescence and elastic scatter information (i.e. [0190], fig. 3B). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to substitute the detector of Danylewych-May for Call's PMT optical detector because Danylewych-May recognizes the advantages of utilizing more than one type of analyzer for his invention. Furthermore, it would have been obvious to a person of ordinary skill in the art to substitute the detector of Danylewych-May for Call's PMT optical detector because it would be desirable to utilize a detection system that is capable of identifying a wide range of biological particulates, such as those that can be identified in response to laser-induced autofluorescence of nicotinamide adenine dinucleotide hydrogen (NADH) and nicotinamide adenine dinucleotide phosphate hydrogen (NADPH) (i.e. [0189], Call).

As to claim 33, Danylewych-May further discloses that the device further comprises a liquid coating applicator configured to moisten the regenerable solid collection surface (i.e. col. 6, lines 1-7). Danylewych-May reads on the claim language recited after the term, "configured to," because it is intended use language. While

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features of an apparatus may be recited structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. Because Danylewych-May discloses a structural feature that is capable of performing the intended use language recited after this term, Danylewych-May properly reads on the claim language.

As to claim 51, Danylewych-May teaches a method comprising: depositing airborne particles on a regenerable collection surface, measuring a biological signature present in the particles comprising the spot, determining a concentration of the immobilized airborne biological particles, and regenerating the regenerable collection surface by removing particles from the regenerable collection surface (i.e. col. 5, line 35 to col. 6, line 55).

As to claim 51, while Danylewych-May teaches utilizing other types of analyzers, such as chemiluminescent detectors in col. 9, lines 2-10, Danylewych-May does not specifically teach having a biological signature comprising an autofluorescence.

See Call above. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the detection parameters of Danylewych-May because Danylewych-May recognizes the advantages of utilizing more than one type of analyzer for his invention to detect more various features of a sample. Furthermore, it would have been obvious to a person of ordinary skill in the art to modify the detection parameters of Danylewych-May by particularly identifying samples that autofluorescence because it would be desirable to utilize a detection system that is capable of identifying a wide range of biological particulates, such as those that can be

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identified in response to laser-induced autofluorescence of nicotinamide adenine dinucleotide hydrogen (NADH) and nicotinamide adenine dinucleotide phosphate hydrogen (NADPH) (i.e. [0189], Call).

As to claim 52, the disclosure of Danylewych-May is indicated above.

Danylewych-May does not specifically disclose having a processor configured to activate at least one additional component if the means for analyzing the spot of immobilized airborne particles collected on the regenerable solid collection surface are potentially harmful to biological organisms.

In addition to the above disclosure, Call discloses, in one particular embodiment (i.e. 3A), a triggering sampler 918 comprising a particle counter 960, which sends a signal to a control unit 936 once the quantity of particulates of a sample has exceeded its threshold value. Then the control sends a signal to the detecting sampler 920 to activate it. The detecting sampler will then determine if a chemical or biological agent is present in the sample (i.e. [0185]).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the device of Danylewych-May by incorporating Call's control unit because it would be desirable to have a main system for insuring that all the components of the device of Danylewych-May are working efficiently together to produce effective data results and that stores such data.

As to claim 45, Danylewych-May does not specifically disclose having an aerosol sampler or an additional aerosol analyzer.

See Call supra. At the time of the invention, it would been obvious to a person of ordinary skill in the art to modify Danylewych-May's invention by incorporating a particle counter (i.e. aerosol sampler or an additional aerosol analyzer) configured to determine an amount of airborne particles because particle counters are well known in the art and there are many types of particles counters that are commercially available (i.e. Call, [0188]).

8. **Claims 44 and 48** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hemeon (US 3572128) in view of Call.

Hemeon discloses an air sensor device (i.e. figs. 1-4) comprising:

a regenerable solid collection surface for supporting a spot of immobilized airborne particles, the regenerable solid collection surface being specifically configured to remove particles from an air stream by impaction of the air stream against the regenerable solid collection surface (i.e. 24, fig. 3, col. 3, lines 13-58);

means for regenerating the regenerable solid collection surface without removing the regenerable solid collection surface from the air sensor device, such that once regenerated, the regenerable collection solid surface can collect additional particles from the air, such that particles collected before regenerating the regenerable solid collection surface are substantially no longer present to contaminate particles collected after regeneration (i.e. 24, fig. 3, col. 3, lines 13-58); and

means for analyzing the spot of immobilized airborne particles while the particles remain disposed on the regenerable solid collection surface without removing the regenerable solid collection surface from the air sensor device (i.e. col. 2, line 59 to col.

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3, line 2), to determine if the spot of immobilized airborne particles represents a biological threat.

While Hemeon discloses a means for regenerating another regenerable solid collection surface by removing particles from this regenerable solid collection surface in col. 1, lines 65-69 and col. 2, lines 13-30, Hemeon does not specifically disclose utilizing wipers for the filter paper (24, figs. 3-4) to remove particles from the surface of the filter paper. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Hemeon's invention by incorporating additional wipers to remove particles from the surface of the filter paper because it would be more time- and cost-efficient to continuously clean and re-use the same filter paper.

See Call *supra*. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Hemeon's invention by incorporating a particle counter configured to determine an amount of airborne particles because particle counters are well known in the art and there are many types of particles counters that are commercially available (i.e. Call, [0188]).

As to claims 44 and 48, Hemeon in view of Call read on the claim language recited after the terms, "configured to," and "capable of," because they are intended use language. While features of an apparatus may be recited structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. Because Hemeon in view of Call disclose the structural feature that is capable of performing the intended use language recited after these terms, Hemeon in view of Call properly read on the intended use claim language.

Allowable Subject Matter

9. Claims 4, 5, 21, 24, 29-32, 34-38, 46-47, 49-50, and 53 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record (Danylewych-May) fails to teach or fairly suggest a device or teach a method comprising a spotting nozzle; the regenerable solid collection surface is part of an impaction plate; a dichroic mirror; an excitation filter or emission filter; a brush, pad, wheel, nozzle, blade, means for electrostatically charging, or means for directing energy as a means for regenerating the regenerable solid collection surface, and a processor coupled to the means for analyzing the spot of immobilized airborne particles, which determines a concentration of particles collected on the regenerable solid collection surface and activates an air sampler to obtain a sample of particles from the same general volume of air that provided the particles originally deposited on the regenerable solid collection surface in combination with the remaining features and elements of the claimed invention.

Response to Arguments

10. Applicant's arguments with respect to claims 1, 7, 21, 24, 33, 47, and 48 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LORE RAMILLANO whose telephone number is (571)272-7420. The examiner can normally be reached on Mon. to Fri.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797

Lore Ramillano
Examiner
Art Unit 1797